

## **FIRM-FILL® 3310 SPECIFICATIONS**

### **PART I. GENERAL**

#### **1.1 Scope**

Specify to meet project requirements. The conditions of the Contract (General, Supplementary, and other conditions) and the General Requirements (sections of Division 1) govern the provisions of this section. The articles contained in this section may modify, delete or add to the conditions of the Contract.

#### **1.2 Qualifications**

- A. Manufacturer: Hacker Industries, Inc., Newport Beach, California.
- B. Installer: Installation of FIRM-FILL® 3310 shall be by a Licensed Applicator of Hacker Industries, Inc., using mixing and pumping equipment approved by Hacker Industries, Inc.
- C. All materials specified herein shall be approved by Hacker Industries, Inc., Newport Beach, CA. All others must receive prior approval.
- D. Compressive strength should be specified from 2000 to 3300 psi (approx. 13.8 to 22.8 MPa).
- E. Materials shall be delivered in their original, unopened packages, and protected from exposure to the elements after delivery.
- F. Certification: Upon completion of this portion of the work, and as a condition of its acceptance, deliver to the architect a certificate from Hacker Industries, Inc., and signed by the Licensed Applicator, stating that the material used in this work complies with the specified requirements.

### **PART II. PRODUCTS**

#### **2.1 Materials**

- A. Gypsum Concrete: FIRM-FILL® 3310, as manufactured by Hacker Industries, Inc.
- B. Subfloor Primer: Hacker Floor Primer or approved equal
- C. Sand: 1/8" (approx. 3 mm) or less washed plaster or masonry sand meeting the requirements of Hacker Industries, Inc. Sand Guidelines.
- D. Water: Potable and free from impurities
- E. Underlayment Sealer: Hacker Floor Sealer or approved equal (if required)

#### **2.2 Mix Design: *see section 3.3***

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### **PART III. PREPARATION**

#### **3.1 Condition of Subfloor**

- A. Subfloor must be structurally sound (L/360), broom clean and free from oil, grease, or other contaminants.
- B. Before installation, the General Contractor shall inspect and approve the condition of the subfloor and any required elevations.

#### **3.2 Preparation of Subfloor**

- A. Leak prevention: All cracks and voids should be filled with a quick setting patching or taping compound where leakage may occur.
- B. Prime wood subfloors with one coat of Hacker Floor Primer (diluted 1:4 with water) using one gallon (approx. 3.79L) per 500 sq. ft. (approx. 47m<sup>2</sup>).
- C. Hacker Floor Primer is not always required over concrete substrates. Multiple coats may be required over porous concrete or plank. (Note: For rehabilitation work or pours over old and/or porous concrete or wood, consult a Licensed Applicator or Hacker Industries, Inc., for recommended floor preparation.)

#### **3.3 Mixing Instructions**

- A. 4 to 6 gallons (approx. 15.1 to 22.7L) of water and sand as specified per 80-pound (approx. 36.3 kg) bag of FIRM-FILL® 3310. Do not overwater. Water amount will change with wetness of sand.
- B. FIRM-FILL® 3310 mix proportions mix designs and methods shall be in strict accordance with Hacker Industries, Inc.'s recommendations.

#### **3.4 Underlayment Application**

- A. Scheduling:
  - 1. Installation of FIRM-FILL® 3310 shall not begin until the building is enclosed including roof, windows, doors, and other openings.
  - 2. FIRM-FILL® 3310 shall be installed before or after the installation of drywall.
- B. Application:
  - 1. The minimum thickness of FIRM-FILL® 3310 varies with the type of subfloor. Over wood subfloors, a minimum of 3/4" (approx. 19mm) is

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required. Over precast or poured in place concrete, a minimum of 1/2" (approx. 13mm) is required.

2. Install FIRM-FILL® 3310 at specified thickness by placing bags, sand, and water into the approved high-speed mixing device and blend for a minimum of one minute. FIRM-FILL® 3310 should be pumped onto floor areas, spreading and screeding to a smooth surface. Place as continuously as possible until installation is complete so that no FIRM-FILL® 3310 slurry is placed against FIRM-FILL® 3310 that has obtained its initial set, except at authorized joints.
  3. FIRM-FILL® 3310 is suitable for interior applications only and must be covered by a finished floor material.
- C. Protection: After installation, temporary wood planking shall be placed by General Contractor wherever the floor underlayment will be subjected to wheeled or concentrated loads.
- D. Drying: Before, during and after installation of FIRM-FILL® 3310, building interior must be ventilated and heated to a minimum 50°F (10°C) to assure completion of the drying process. The General Contractor shall provide continuous ventilation and adequate heat to rapidly remove moisture from the area until the FIRM-FILL® 3310 is dry. Before the installation of finished floor goods, the FIRM-FILL® 3310 must be free from any moisture. Consult flooring contractor for recommended procedures to test for dryness.
- E. Sealing: Hacker Floor Sealer can be specified when extra protection is required. Any floor underlayment areas where the surface has been damaged should be cleaned and sealed prior to application of finished floor goods. FIRM-FILL® 3310 must be dry before application of sealer.

### **3.5 Preparation For Installation of Floor Coverings**

- A. Sealing: Any areas where the underlayment surface has been damaged should be cleaned and sealed regardless of floor covering specified. Floor covering manufacturers' specifications and requirements supersede these recommendations.
- B. Floor Covering Procedures: Please see the Hacker Industries, Inc.'s "Guidelines for Installing Finished Floor Coverings". The guideline is not a warranty and should be used as a guideline only. Also see ASTM F2419 for recommended procedures.

### **3.6 Field Quality Control**

- A. Slump Test: FIRM-FILL® 3310 shall be tested for slump at the beginning of each installation in order to establish the required slump. Slump tests shall then be taken periodically during installation to verify that the required slump is maintained. Slump tests shall be conducted using a 2" by 4" (approx. 51mm by 102mm)

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cylinder. The acceptable patty size should be 7-1/2" (approx. 191mm) plus or minus 1/2" (approx. 13mm) in diameter.

- B. Field Samples: Testing shall be done in accordance with ASTM C472 modified testing procedures, using 2" (approx. 51mm) split brass molds. Prior to independent sampling, contact Hacker Industries, Inc., to ensure that proper ASTM procedures are followed. If requested prior to installation, test results shall be available to the architect and/or contractor from the Licensed Applicator.